

CLAIMS

What is claimed is:

1. A hot water dispensing system comprising:
 - an outer housing;
 - a water tank comprising an inlet and an outlet disposed within the housing;
 - a heating element disposed inside of the water tank;
 - 5 a heater control disposed within the housing that is coupled to the heating element;
 - a thermostat coupled to the heater control that senses and controls the temperature of water in the water tank in conjunction with the heater control and heating element;
 - 10 an inlet tube for connection to a cold water source;
 - a variable volume expansion chamber comprising a flexible internal bladder;
 - an orifice block comprising an input passage coupled to the inlet tube, a suction tube coupled to the variable volume expansion chamber, and an outlet passage coupled to the inlet of the water tank;
 - 15 a discharge hose coupled to the outlet of the water tank for connection to a faucet.
2. The system recited in Claim 1 further comprising a self-resetting heater control switch that turn off power to the heating element there is no water in the water tank.
3. The system recited in Claim 1 wherein the variable volume expansion chamber is designed to withstand a pressure of at least 300 pounds per square inch.
4. The system recited in Claim 1 wherein the outer housing comprises metal.
5. The system recited in Claim 1 wherein the water tank comprises stainless steel.
6. The system recited in Claim 1 wherein the variable volume expansion chamber comprises plastic.

7. The system recited in Claim 1 wherein the self-resetting heater control switch comprises bimetallic switch contacts.

8. The system recited in Claim 1 wherein the variable volume expansion chamber comprises first and second mating sections, a vent hole disposed in one of the mating sections, and a flexible bladder secured between the mating sections which is free to move laterally within the expansion chamber.

9. The system recited in Claim 8 wherein the first and second mating sections comprise plastic and the flexible bladder comprises silicone.

10. A hot water dispensing system comprising:
 an outer housing;
 a water tank comprising an inlet and an outlet disposed within the housing;
 a heating element disposed inside of the water tank;
 5 a heater control disposed within the housing that is coupled to the heating element and that comprises a self-resetting heater control switch that turn off power to the heating element there is no water in the water tank;
 a thermostat coupled to the heater control that senses and controls the
 10 temperature of water in the water tank in conjunction with the heater control and heating element;
 an inlet tube for connection to a cold water source;
 a variable volume expansion chamber comprising a flexible internal bladder;
 an orifice block comprising an input passage coupled to the inlet tube, a suction
 15 tube coupled to the variable volume expansion chamber, and an outlet passage coupled to the inlet of the water tank;
 a discharge hose coupled to the outlet of the water tank for connection to a faucet.

11. The system recited in Claim 10 wherein the variable volume expansion chamber is designed to withstand a pressure of at least 300 pounds per square inch.

12. The system recited in Claim 10 wherein the variable volume expansion chamber comprises plastic.

13. The system recited in Claim 10 wherein the outer housing comprises metal.

14. The system recited in Claim 10 wherein the water tank comprises stainless steel.

15. The system recited in Claim 10 wherein the self-resetting heater control switch comprises bimetallic switch contacts

16. The system recited in Claim 10 wherein the variable volume expansion chamber comprises first and second mating sections, a vent hole disposed in one of the mating sections, and a flexible bladder secured between the mating sections which is free to move laterally within the expansion chamber.

17. The system recited in Claim 16 wherein the first and second mating sections comprise plastic and the flexible bladder comprises silicone.